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ABSTRACT

This module on modifying curriculum is 1 in a series of 10 modules written for vocational education teacher education programs. It is designed to prepare the learner to identify the varying learning styles of learners and to modify curriculum by providing alternative techniques for curriculum modification. Introductory materials include the following: a listing of competencies/tasks to be covered, objective, overview of the module, listing of suggested resources, and content/instructional strategies, including prerequisite information. The module consists of two sections. Section 1 provides an overview of the different types of learning styles, several ways to assess these learning styles, and types of classroom teaching modifications that will meet the various learning styles found in the classroom. Section 2 discusses three modification techniques that serve as practical methods to facilitate this process. Each section consists of some or all of these components: introduction, body of lesson, summary and review, and activity worksheets needed to complete the activities that are a part of the section. Suggested responses for activity worksheets are appended. (YLB)

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MODULE:***Modifying Curriculum***

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MODULE : LEARNING STYLES/CURRICULUM MODIFICATIONS

Competences/Tasks:

Identify the differing learning styles of students with special needs.

Modify instructional materials/instruction for students with special needs.

Teaching is a complex and difficult task requiring teachers to make numerous decisions regarding the design and delivery of instruction. Meaningful instruction requires that the teacher arrange the learning environment in such a way that students will be able to achieve educational objectives effectively and efficiently. Many times the modification of curriculum materials is necessary to meet the varying learning styles and needs of students in a vocational classroom. This module will prepare the learner to identify the varying learning styles of learners and to modify curriculum by providing alternative techniques for curriculum modification.

Objectives:

The learner will be able to modify curriculum through application of:

1. Identifying learning style of learner by use of learning style inventories.
2. Adapting printed materials to accommodate the individual needs of special needs students
3. Using techniques that make students' textbook reading easier and more effective.
4. Providing guidelines and practice in presenting teacher developed materials direct and understandable.

Overview of Module:

An instructional program should create the most efficient possible learning experience for the student, and then measure that experience by some suitable criterion. When we say "the most efficient learning experience" we are immediately challenged to identify the student's most appropriate learning style(s). If we can discover a student's learning style, if we can discover what materials they respond most favorably to, with the most success, then we will know what instructional method will most appropriately meet their education needs. It is not uncommon for instructional materials used in the classroom to be inappropriate for use by students with special needs. The materials may contain specialized content, vocabulary or technical information which may necessitate alternative modes of presentation in order for the student to acquire the needed skill or information. This module contains a collection of suggestions that relate to modifying curriculum for special needs learners. These modifications allow the instructor to provide the learner with techniques for acquiring and retaining information in relationship to their learning style. The identification of a student's learning style would be useless if it did not lead to changes in the curriculum, methods of instruction, and a

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learning environment which will meet the student's needs. A time period of approximately 40-50 minutes per modification is required to present these techniques, and in most cases, this period can be broken into several shorter presentations. To insure the maximum effectiveness of this module, the techniques presented can be used to make the reading and acquiring of information more meaningful to students and to alert instructors to the need of accommodating the diversity of learning needs within the classroom.

Suggested Resources:

1. Supplies: Overhead projector, screen, transparency marker, and blank transparency, learning styles inventory and observation checklists.
2. Assignment: See Activity Worksheets
3. Resources and References:

Video tape - successful Modification of Curriculum/Technology Special Skills - Source, Media Center, State Fair Community College - Sedalia, MO.

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Piercey, D. (1976). Reading activities in content area. Boston, MA: Allyn and Bacon, Inc.

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Content/Instructional Strategies: None

Introduction:

Every person has a way to learn despite their ability level. While we must consider the variety of learning styles people use, we must also be cognizant of the fact that there is no right or wrong way to learn, and that there are styles which are more appropriate for given situations and types of learners. The challenge for educators is to be able to determine the learning style of their students and then develop teaching strategies which address the various learning styles within their classrooms. The way we choose to communicate with students must address such issues as how the student has learned in the past, what kind of instruction is most appropriate, and how we, as educators, know that the students are learning under the most favorable conditions, with the most success so that we will know what instructional method will most appropriately meet the students' instructional needs. The information provided in this section of the module will provide educators with an overview of the different types of learning styles, several ways to assess these learning styles, and the types of classroom teaching modifications which will meet the various learning styles found in the classroom.

Body of Lesson:

Auditory

Learner: This is the student who learns from hearing words spoken. You may hear the students vocalizing or see their lips moving as they read, especially when attempting to understand new and unfamiliar material. This student will be more capable of understanding and remembering words or facts that can only be learned by hearing. Therefore, auditory learners need special emphasis on the hearing mode of learning which means that educators must pay special attention to oral presentations and develop specific teaching techniques to help students acquire materials through the auditory modality. Such teaching techniques include:

Speak slowly and clearly. Ask students to pay special attention to lip movements.

Be sure that the student is seated with a clear view of the speaker.

Some students may learn best by closing their eyes and listening.

Vocabulary is constantly being expanded in educational settings so be careful to pronounce new words and give the students the opportunity to practice saying them.

Tape-record lessons which will allow the student to review materials. Encourage students to take notes and then check the notes to see if material is recorded correctly as they listen to the tape-recording.

Read aloud while students follow along. This is especially helpful when giving directions for taking a test or for performing new tasks. If oral directions are not also in writing, have the student write them down. Ask the student to repeat the directions or read back what he or she has written.

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Directions may need to be repeated. It may also be necessary to allow more time for the student to respond to questions. Oral tests and oral feedback will help reinforce learning.

Use cues to alert the listener to important points when outlining material verbally. For example—The three major systems on this motor are: fuel, electrical, and cooling.

Encourage auditory learners to repeat important points quietly to themselves and ask them to try and hear the words or major points.

Pictures, charts, or lists of items can be used to teach auditory learners if the content is verbalized. Explain the picture or chart slowly and in specific detail. Allow time for questions or allow the student to repeat what is on the chart.

Use debate and discussion in your lesson format.

Role-playing is another good technique for auditory learners. Let the auditory learner give a sales demonstration on the features of a new table saw and let other class members ask questions. Ask the auditory learner to demonstrate tasks to others. Encourage auditory learners to talk about their work to others.

Audio-tapes, interviews, interpretive reading, discussions, debates, speeches, TV, records, and recording lectures are all ways the auditory learner can access information. The auditory learner can interact and verbalize through oral reports, panel discussions, brainstorming, round-robin formats, debates, discussions, and oral questions and answers.

Remember that the auditory learner learns best by listening and will retain information longer and more completely when the information is heard. Develop vocational instruction that includes the delivery of classroom information in the auditory mode. This will benefit those who learn mainly by hearing and will enhance the quality of teaching.

Visual

Learner: The visual learner is the student who learns well from seeing words and numbers in books, on the chalkboard, charts and workbooks. These students are more likely to remember and understand what they are presented visually. This student may even write down information which is given orally in order to learn by seeing the information on paper. A visual learner remembers and uses information better if it is read and usually doesn't need the type of oral explanation which is needed by the auditory learner. The educator must then teach students to concentrate on visual modes of learning and find ways to turn the spoken word into visual representations.

Allow students to see the item of discussion, such as the metal lathe or the setting on a micrometer.

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If reading is involved, encourage the student to practice the look-say method. The visual learner will not benefit from sounding out words. If math is involved, make flashcards of problems, formulas, or equations. These can also be used for future reference. Show each step of a process on a separate card.

Encourage student to underline key points when reading. They should also be taught a note-taking format that clearly separates concepts.

Acronyms can also be used with the visual learner. Instead of saying the acronyms as an auditory learner would do, the visual learner would try to visualize the words in his or her mind.

Teaching techniques should include a variety of visual aids. Draw and write on the chalkboard, use overhead projectors, preferably with colored overlays, graphs, diagrams, or maps that are highly visual. Movies, filmstrips, and videotapes are appropriate. Encourage the visual learner to use drawings, maps, and graphs to complete assignments and to present his or her ideas.

Bulletin boards, posters, slides, films, filmstrips, pictures, graphs, flashcards, transparencies all help visual learners. Don't forget comic books, pamphlets, newspapers, wall graffiti, magazines and riddles.

Tactile Learner:

The tactile learner will learn best by doing. This means that it is necessary to provide hands-on activities in the classroom and laboratory so that the student can be involved in these hands-on experiences. Utilize accessible equipment such as tape recorders, calculators, typewriters, computers, and audio-visual equipment in the classroom. In the shop or laboratory the scope of the tactile learner's experience is limited only by the imagination and ingenuity of the teacher. The student should begin using available tools and equipment as soon as possible. Provide field trips to show the student where skills are used on the job. Provide work experience or simulated work experiences. Whenever possible, arrange a learning situation that involves activity. When conducting classes, bring the items under discussion to class and let the tactile learner feel and touch them. The following suggestions serve only as a catalyst for the educator's imagination.

Provide hands-on activities, and arrange for the tactile learner to get involved in hands-on experiences.

Use concrete examples and give the tactile learner the opportunity to touch objects, textures, temperatures, weights, lengths/distances, and pressures.

Have the students use games, experiments, manipulative materials and pantomimes.

Have students construct dioramas, collages, scrolls, pictographs, media presentations, timelines, models, and bulletin boards to acquire information.

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Allow the tactile learner to copy information.

Whenever possible, let the student build models or replicas. Constructing model homes to scale would allow the tactile learner to acquire knowledge of acceptable building design and practices.

Auditory-Visual-Kinesthetic Combination:

This student learns best by experience, doing, and total self-involvement and needs a combination of stimuli. The manipulation of material along with the accompanying sights and sounds (words and numbers seen and heard) will make a considerable difference to the student who may not be able to concentrate on work unless he is totally involved.

Individual

Learner: This student gets more work done when he or she is working alone. They process information and are more successful at remembering the information when learning has been done alone. An individual learner cares more for their own opinions than for those of others. Educators do not have difficulty in keeping the individual learner from over-socializing in class.

Group

Learner: The group learner is a person who prefers to work with at least one other person, and will not be able to accomplish as much if left to work alone. This type of learner values the opinions of others, often using this information to formulate their own opinions and group interactions and as an aid in the later recognition of facts.

Oral Expressive

Learner: An oral expressive learner can easily tell you what he or she knows by talking fluently and comfortably. You will find that this person knows more than written tests show by talking to them about their work. This student is not shy about giving reports or talks, but writing may be difficult and the organization and putting of thoughts on paper may be a slow and tedious task for the oral expressive learner.

Written Expressive

Learner: The written expressive learner can write fluent essays and good answers to show what they know, but feels uncomfortable when asked to give oral answers. This learner's thoughts are better organized on paper than when they are required to give them orally.

How To Assess Learning Preferences

Interview: One of the first ways to determine a student's preferred learning style is to conduct an interview with the student, giving them a chance to interact with you in order to share their feelings, reactions, concerns, and problems. The interview between the educator and student should be structured enough to allow students to express themselves. Some topics which might be useful for an interview might include:

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How does the student feel about school?

Difficulties or embarrassments the student has experienced at school.

Outside interests of the student.

The student's perception of their personal strengths.

The student's vocational ambitions. With an open, relaxed and genuinely interested teacher, the interview can be one of the most valuable ways to assess students because it highlights the giving and taking that is the essence of instruction.

Interest

Inventory: The interest inventory and the interview are similar in that they both seek to find the student's interests and reactions to the learning environment. Interest inventories are important because they provide an alternative for students who are shy or uncomfortable in one-on-one conversations. There are many standardized instruments which ask certain specialized questions. These include:

Ohio Vocational Interest Inventory

Self-Directed Search

The Harrington O'Shea Decision Making System

Strong-Campbell Interest Inventory

*C.I.T.E. Learning Styles Instrument

* This instrument is found as Activity Worksheet 1.

Learning Preference Profiles:

Like the interest inventory, the learning preference profile is usually completed by the students so it is also a more structured assessment than the interview and gives the student a chance to show how they would like to learn. *A learning preference profile is found as Activity Worksheet 2.

Observation:

Of course, one of the simplest but most productive ways to discover how students learn best is by observation. To successfully assess the learner, it is necessary for the teacher to identify an actual behavior which can be observed. An example of an observation instrument is found as Activity Worksheet 3.

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Summary and Review:

The learning styles found within a classroom vary greatly, yet have a measurable impact upon a student's ability to acquire, process, retain, and recall information. The preceding information has provided you with an overview of the different learning styles found within the classroom setting as well as some suggestions for modifying your teaching strategies to accommodate these learning styles. The activity section of this module provides examples of an observation form, the C.I.T.E. Learning Styles Instrument, and a learning preference profile.

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Activity Sheet 1

	Most Like Me		Least Like Me	
1. When I make things for my studies, I remember what I have learned better.	4	3	2	1
2. Written assignments are easy for me to do.	4	3	2	1
3. I learn better if someone reads a book to me than if I read silently to myself.	4	3	2	1
4. I learn best when I study alone.	4	3	2	1
5. Having assignment directions written on the board makes them easier to understand.	4	3	2	1
6. It's harder for me to do a written assignment than an oral one.	4	3	2	1
7. When I do math problems in my head, I say the numbers to myself.	4	3	2	1
8. If I need help in the subject, I will ask a classmate for help.	4	3	2	1
9. I understand a math problem that is written down better than one I hear.	4	3	2	1
10. I don't mind doing written assignments.	4	3	2	1
11. Written assignments are easy for me to do.	4	3	2	1
12. I remember more of what I learn if I learn it when I am alone.	4	3	2	1
13. I would rather read a story than listen to it read.	4	3	2	1
14. I feel like I talk smarter than I write.	4	3	2	1
15. If someone tells me three numbers to add I can usually get the right answer without writing them down.	4	3	2	1
16. I like to work in a group because I learn from the others in my group.	4	3	2	1
17. Written math problems are easier for me to do than oral ones.	4	3	2	1
18. Writing a spelling word several times helps me remember it better.	4	3	2	1
19. I find it easier to remember what I have heard than what I have read.	4	3	2	1
20. It is more fun to learn with classmates at first, but it is hard to study with them.	4	3	2	1
21. I like written directions better than spoken ones.	4	3	2	1
22. If homework were oral, I would do it all.	4	3	2	1
23. When I hear a phone number, I can remember it without writing it down.	4	3	2	1

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24. I get more work done when I work with someone.	4	3	2	1
25. Seeing a number makes more sense to me than hearing a number.	4	3	2	1
26. I like to do things like simple repairs or crafts with my hands.	4	3	2	1
27. The things I write on paper sound better than when I say them.	4	3	2	1
28. I study best when no one is around to talk or listen to.	4	3	2	1
29. I would rather read things in a book than have the teacher tell me about them.	4	3	2	1
30. Speaking is a better way than writing if you want someone to understand what you really mean.	4	3	2	1
31. When I have a written math problem to do, I say it to myself to understand it better.	4	3	2	1
32. I can learn more about a subject if I am with a small group of students.	4	3	2	1
33. Seeing the price of something written down is easier for me to understand than having someone tell me the price.	4	3	2	1
34. I like to make things with my hands.	4	3	2	1
35. I like tests that call for sentence completion or written answers.	4	3	2	1
36. I understand more from a class discussion than from reading about a subject.	4	3	2	1
37. I remember the spelling of a word better if I see it written down than if someone spells it out loud.	4	3	2	1
38. Spelling and grammar rules make it hard for me to say what I want to in writing.	4	3	2	1
39. It makes it easier when I say the numbers of a problem to myself as I work it out.	4	3	2	1
40. I like to study with other people.	4	3	2	1
41. When teachers say a number I really don't understand it until I see it written down.	4	3	2	1
42. I understand what I have learned better when I am involved in making something for the subject.	4	3	2	1
43. Sometimes I say dumb things, but writing gives me time to correct myself.	4	3	2	1
44. I do well on tests if they are about things I hear in class.	4	3	2	1
45. I can't think as well when I work with someone else as when I work alone.	4	3	2	1

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C.I.T.E. Learning Styles Instrument Score Sheet

Visual Language

5 - _____

13 - _____

21 - _____

29 - _____

37 - _____

Total _____ x 2 = _____ (Score)

Social-Individual

4 - _____

12 - _____

20 - _____

28 - _____

45 - _____

Total _____ x 2 = _____ (Score)

Auditory Numerical

7 - _____

15 - _____

23 - _____

31 - _____

39 - _____

Total _____ x 2 = _____ (Score)

Visual Numerical

9 - _____

17 - _____

25 - _____

33 - _____

41 - _____

Total _____ x 2 = _____ (Score)

Social-Group

8 - _____

16 - _____

24 - _____

32 - _____

40 - _____

Total _____ x 2 = _____ (Score)

Kinesthetic-Tactile

1 - _____

18 - _____

26 - _____

34 - _____

42 - _____

Total _____ x 2 = _____ (Score)

Auditory Language

3 - _____

11 - _____

19 - _____

36 - _____

Total _____ x 2 = _____ (Score)

Expressiveness-Oral

6 - _____

14 - _____

22 - _____

30 - _____

Total _____ x 2 = _____ (Score)

Expressiveness-Written

2 - _____

10 - _____

27 - _____

43 - _____

Total _____ x 2 = _____ (Score)

Score: 33 - 40 = Major Learning Style

20 - 32 = Minor Learning Style

5 - 20 = Negligible Use

Learning Style Profile

Name _____

Date _____

	Minor										Major									
	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40				
Visual Language																				
Visual Numerical																				
Auditory Language																				
Auditory Numerical																				
Kinesthetic																				
Social Individual																				
Social Group																				
Expressiveness Oral																				
Expressiveness Written																				

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Activity Sheet 2

This inventory uses a combination of open preference checklist items and open ended questions/comments.

Learning Preference Profile*

Name _____ Learning Community _____

Advisor _____ Date _____

Completed by: Student _____ Advisor _____
Parent _____ Teacher _____

Tentative Long-Range Plans _____

Directions: Check those learning preference factors that seem most appropriate or best describe you. Check all factors that apply.

Evaluation Preference Factors:

- _____ Observation
- _____ Paper/Pencil objective tests
- _____ Paper/Pencil essay tests
- _____ Produce evaluation (project)
- _____ Standardized tests
- _____ Take home/open book tests
- _____ Performance (speech, report)

Motivational Preference Factors:

- _____ Ambiguity
- _____ Uncertainty
- _____ Exciting lectures
- _____ Fascinating movies
- _____ Intense discussion
- _____ Reading
- _____ Thinking about things
- _____ Observing situations

*A Learning Preference Profile is in no way a "report card" on your ability or conduct. There are no right or wrong, good or bad answers. The profile will help teachers (and you) understand how you prefer to learn. The profile will only be used for your benefit. Teachers may use the information to make your learning program more appropriate for you.

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Activity Sheet 3

The following observation form* leads you to record the observed behaviors of a student for ten minutes. It is a combination of an open-ended descriptive system with frequency counts. A series of these observations over a period of weeks might help to reveal learning styles of students, particularly if the record were kept during a study time or independent activity period.

Observation No. _____

Observer: _____ Date: _____

Time: from _____ to _____

Learner's Name: _____

Grade: _____ Activity _____

Describe, in behavioral terms, the setting within which the activity typically takes place.

List all the behaviors displayed by the learner during a ten-minute period in which he is engaged (or supposed to be engaged) in the chosen activity. If the same behavior occurs more than once, indicate this by making tallies in the frequency column.

Description of Behavior	Frequency
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

*From: Developing Observation Skills. Carol A. & G. Philip Cartwright, New York: McGraw Hill, 1974. (p. 41)

Introduction:

Teaching is a complex and difficult task requiring teachers to make numerous decisions regarding the design and delivery of instruction. Meaningful instruction requires that the teacher arrange the learning environment in such a way that students will be able to achieve education objective effectively and efficiently. Many times the modification of curriculum materials is necessary to meet the varying needs of students in a vocational classroom. This section of the module will provide three modification techniques which serve as practical methods to facilitate this process.

Body of Lesson:

Instructional materials available to educators often are not suitable for exceptional learners. Materials which are too lengthy or complicated can be revised through modification. It is less time consuming to adapt existing materials than to create or rewrite materials. Regular classroom texts, guides, and worksheets can often be successfully adapted to suit the needs of the special learner who is experiencing difficulty with textual information. The following curriculum modifications serve this purpose.

Convert print to

audio tape: The simplest adaptation is to convert the printed page to an audio-tape. If the student can comprehend the material by hearing it, audio-tapes provide an appropriate adaptation.

Highlight main: Another adaptation can be readily accomplished through highlighting the main ideas and concepts you want the student to gain from the material. Highlighting can be done by:

- a) using a translucent highlighting felt-tip pen.
- b) underlining
- c) deleting nonessentials with a dark felt-tip pen.

Cut and paste: A time-saving technique which is often overlooked by secondary-level teachers is the cut-and-paste-revision. Only the main ideas or specific content needed are cut from a xeroxed copy of the original text and pasted on separate sheets of paper. Or, if two expendable copies of the text are available the original text can be used. This technique offers the teacher a number of advantages, including:

- a) Sequential units which can be arranged to suit the need.
- b) Additional heading can be inserted to facilitate organization and retention of facts.
- c) Small segments can be presented singly to facilitate early success and minimize the feeling of being overwhelmed by the size of the task.

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d) Nonessential distracters can be removed, such as complicated charts, illustrations, colors, or other potentially confusing elements.

e) Time can be saved with this process as compared with having to develop new materials or rewrite old ones.

Translate into graphic aids

The printed word can be translated into graphic aids which can be represented by:

- a) charts
- b) graphs
- c) maps
- d) models
- e) illustrations
- f) mock-ups
- g) real objects and materials

Reorganize and sequence logically

Reorganization of materials can be done to facilitate learning. Logical sequencing of ideas, tasks, or directions should be given careful attention so the student can use "chaining." "Chaining" involves attaching one idea to the next by a logical linkage. This strategy facilitates memory.

Use advance organizers

Sometimes existing materials can be used "as is" if advanced organizers are used to prepare the student for using the materials. Pre-organizing strategies include:

- a) outlines
- b) study guides
- c) key questions
- d) special vocabulary definitions
- e) background information
- f) chapter summaries
- g) state objectives
- h) pretests

Rewrite materials:

Because a considerable time investment is required, rewriting textual material should be undertaken only when other suitable materials are not available.

The purpose of rewriting is to simplify. Simplification can be accomplished through adapting any or all of the following:

- a) vocabulary
- b) length of sentences
- c) complexity of sentences
- d) length of paragraphs
- e) format

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f) size of print g) placement on page	
Provide for closure	Special attention should be given to the length and complexity of the units submitted to the special learner. A common obstacle to motivation in learning is the lack of closure. When a student can see how the unit fits into a framework of ideas and can experience successful completion within a reasonable length of time, she/he is more likely to enter the learning experience with a positive attitude. Special learners usually require smaller units of instruction initially and need to know that they can complete a unit within a specified and foreseeable length of time.
Include feedback system	Another important factor to be considered in adapting materials for special learners is the inclusion of systematic feedback. Special learners with a history of nonsuccess benefit from immediate feedback whenever possible. Self-checking answer keys used at frequent intervals are desirable components in learning materials.

Using the Textbook as a Learning Tool

Textbooks are selected to provide students with important information on a given subject. Mastery of specialized content in the textbook aids students in the application of the knowledge and also provides a resource for future reference. Teachers in every subject area need to develop skills to assist students in gaining the essential information from the textbook. This section of the module will present techniques that can be used to make the reading of textbooks more meaningful to students. Because they are unfamiliar with the technical, unique vocabulary and concepts, most students find that subject matter textbooks are more difficult to read than books that tell a story. This section will help you become aware of the necessity to provide a purpose for reading and introducing technical vocabulary as well as examine one method for teaching technical vocabulary introduced in textbooks.

Reading with a purpose is an efficient and productive learning method. Students who read with a purpose think about what they are reading rather than merely receiving information. Materials may be read differently if students know ahead of time specific terms and concepts to look for during their reading. In order to grasp the meaning of a reading and later be able to apply it, they must also know information vocabulary words. The following activity will clarify this concept.

Observe the room you are in for one minute, remembering everything you think is important. After the observation period has elapsed, look at Activity Sheet 4 and answer the questions read by the teacher without looking up from your paper.

1. How many chairs are there in the room?
2. How many windows?
3. How many doors?
4. How many light fixtures?
5. Is there an American flag in the room?

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Following this exercise, read the questions in section B and then observe the room for one minute and answer the question in section B. Why was the first task difficult? Did you know what to look for? Were there too many things to remember? Did you know what was important? Why was the second task easier? You read the question before your observation so you knew immediately what to count.

This activity also relates to the reading of a textbook. Knowing the purpose of reading assignments leads to more efficient learning. Students need assistance in determining the purpose of a reading assignment.

Another major responsibility of any content instructor is to acquaint students with the meaning of the technical vocabulary associated with the field. Teachers should compile a list of content terms whose meanings are either only partly familiar or completely unknown to students. Clarification of technical vocabulary can make reading more significant and beneficial for students. To maximize learning, instructors must teach students technical or unfamiliar terms before making reading assignments.

There are several methods for teaching vocabulary to students. One of the most frequently used is the word list. Instructors often hand out dittoed word lists with this comment "You will need to know the meanings of these words if you are going to understand this new material. Look up these words in the dictionary, write down the definitions, and write a sentence with each word. Memorize each word well because we will have a test over them on Friday." How long do students usually remember the words they learn this way?

Giving a pretest has proven to be successful for teaching vocabulary in specific subject areas. This technique includes the following:

Identify all new

key words Identify the key words to be taught for a specific topic or skill.

Give pretest

Give the students a pretest over the words to determine how much knowledge of the words they already have.

Discuss the meaning
of the words using
familiar

examples

Discuss the word with the students by using a method such as "Talk Through." With this method the instructor uses examples, models, diagrams, demonstrations, and questions to stimulate responses relating to students' everyday lives to help them understand the meaning of the new vocabulary words.

Assign the chapter
to be read

Assign the chapter to be read.

Give a review
test

Give a review test similar to the pretest to see how well the students have mastered the new vocabulary words.

Schedule a
sharing

Use at least one of the methods for teaching vocabulary explained on Activity Sheet 5. Analyze the results and have the students comment on the activity.

Simplifying Written Communication

Notes

The readability of teacher written materials is largely ignored although worksheets, tests, summaries, study guides, and instruction sheets are a regular part of every classroom. In developing these materials the degree of difficulty is left largely to chance and usually depends upon the teacher's "feel" for what most students can comprehend.

Because a considerable amount of time is often devoted to the development of teacher written instructional materials, the following guidelines will assist you in writing techniques which produce clear and comprehensive communications. The following guidelines apply:

Principle I: Keep sentences short and simple.

A. Remove the "fat."

When unnecessary verbiage is weeded out, complex structure does not clutter up comprehension. Remove the "fat" and clearly defined ideas emerge. Remove the "fat" from Activity Worksheet 6 and rewrite the information to make it clearer.

B. Use familiar words

The average high-school student can use approximately 10,000-15,000 words correctly in sentences. The routine conversation of the average person rarely goes beyond the 3,000 most familiar words.

Ten short words make up 25% of all written and spoken English.

These are:

the	and	a	that	is
of	to	in	it	I

Only fifty words make up 50% of written English. Written communication using other words can still be easily read and understood if the average sentence is less than 20 words and four of five words are from the 3,000 commonly used words. Activity Worksheet 7 will give you the opportunity to try using familiar words.

C. When possible, use simple synonyms.

Avoid cluttering your writing with jargon. Use simple, more familiar words if the meaning still remains clear. For example, how many times have you written, or read, a statement like: "Should you encounter difficulty in the utilization of this technique, a modification can be implemented which should allow optimum efficiency." Instead, all you need to say is, "If you have trouble doing it this way, try another." Activity Worksheet 8 will give you an opportunity to practice using simple synonyms.

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Notes

Principle 2.
Use concrete,
descriptive
terms.

- A. Use active words.

Active words hold the reader's interest and are remembered. Passive verbs add variety, but make for dull reading in comparison. For example: rephrase "An improvement in grades has been seen." to "Grades have improved." Activity Worksheet 9 addresses this competency.

- B. Write like you talk.

In face-to-face conversation we generally use simple forms of expression rather than complicated vocabulary and complex grammar. But when writing, we often use four-syllable words where two-syllable synonyms would do, three words where one would be clearer, and connecting words where not required for clear communication. To avoid this, ask yourself, "How would I explain that to a student face to face." Usually this will result in a simple, direct statement of what you want to say.

Principle 3. Make
sentences
relevant

- A. This principle focuses more on the reader than on the words themselves. Consider the student's frame of reference. The meaning a reader gives to words is determined entirely by his/her past experience and purposes. Therefore, the meaning of words vary depending on the experience of the reader.

- B. Use an appropriate abstraction level.

Highly abstract words are most open to interpretation and thus result in vagueness of communication. The closer an idea is to the reader's experience, the more likely the writer's intended meaning will be comprehended.

Because most teachers are so fully acquainted with their field, there is an unconscious tendency to use higher levels of abstraction. Always consider the abstraction level your students can handle and write your materials at that level. Remember that they are still acquiring skill in which you, as teachers, have achieved competence. Therefore, they will need more concrete written examples to acquire details.

- C. Don't get lost in details. Before you write, ask yourself, "Exactly what am I trying to say?" The clearer your idea, the fewer unneeded details will drift into your writing.

After writing a section, paragraph, etc., work with pencil in hand and mark out all unnecessary detail. Keep in mind your objectives as well as your student's frame of reference. Unnecessary details tend to cloud comprehension. Activity Worksheet 10 will help you master this competency.

Summary and Review

Notes

When existing materials are not suitable for an individual student's needs, adaptations can be made by using one or more of the techniques which have been discussed in this module. In adapting materials the student's strengths should be considered along with the weaknesses which make the material inappropriate for that student. Adaptation of materials should be considered when such revision will be time effective (time investment is not out of balance with benefit derived). The following cases meet this criteria:

1. Only minor adaptations are required.
2. Other suitable materials are not available.
3. Once adapted, materials will be used with other students.

When using the textbook as a learning tool, several methods for teaching were presented. To summarize this section, the following proverb reiterates the need for instructors to show students how to use the textbook as a learning tool:

A Proverb

If you give a man a fish,
he will have a single meal;
if you teach how to fish,
he will eat all his life.

When simplifying and clarifying teacher written materials for student use in the classroom, teachers should apply the basic principles of clear writing discussed in this module:

1. Keep sentences short and simple.
2. Use concrete, descriptive terms.
3. Make it relevant.

This is essential for special needs students but equally appropriate for any student. Remember, it is not enough to write so you will be understood. You have to write so you cannot be misunderstood.

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Activity Sheet 4

Observation Experiment Worksheet

Section A

- 1.
- 2.
- 3.
- 4.
- 5.

Section B

1. How many electrical outlets and switches are in the room? _____
2. How many bulletin board areas in the room? _____
3. How many desks or tables are in the room? _____
4. In what direction does the room face? _____
5. How many drawer and door handles/knobs are in the room? _____

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Activity Sheet 5

Methods for Teaching Vocabulary

I. Identify all new key words.

2. Give a pretest - Example

Match the word with the definition. Write the letter of the correct definition next to each word.

- | | | | |
|--------------|-------|----|---|
| 1. pulley | _____ | a. | point on which a lever or crowbar turns |
| 2. element | _____ | b. | something that flows |
| 3. compass | _____ | c. | has definite shape |
| 4. liquid | _____ | d. | part of biology or study of environment |
| 5. neon | _____ | e. | kind of matter |
| 6. fulcrum | _____ | f. | something that carries electricity |
| 7. eclipse | _____ | g. | moon hides the sun |
| 8. solid | _____ | h. | makes work easier |
| 9. conductor | _____ | i. | tells direction |
| 10. ecology | _____ | j. | a gas |

III. Discuss the meaning of words using familiar examples.

- A. Talk Through: Use examples, models, diagrams, demonstrations, and question to stimulate responses relating to students' everyday lives to help them understand the meaning of the new vocabulary words.
- B. Who Dreamed That Word Up? An unknown word or new word is compared with an amusing story concerning its origin. Example:

In Italy moneylenders used to set up benches in the marketplace at which they conducted their business, he literally broke his bench as a symbol that he not longer was in business. The Latin word of break is "ruptura": the "banca" + "ruptura" equals BANKRUPT.

Sources of Word Histories

Asimov, I. (1968). Words from history. Boston: Houghton Mifflin Co.

Blumberg, D.R. (1973). Whose what? New York: Holt, Rinehart and Winston.

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- C. Buddy dictionary Words: The teacher presents all the key words for a particular unit of work. These are listed on the board and students copy each word on a 3x5 card. Instead of each student work on the vocabulary list alone, as is the custom, the students work in pairs or small groups. Buddies help each other master troublesome words. One becomes the instructor while helping the buddy(ies) learn the words. Then another person becomes the instructor.

Each buddy makes two-sided cards for the words she/he is to learn. They write the sentence in which the word was found and underline the word. The emphasis is on words in context, not in isolation.) Next, the phonetic spelling is written. This is Side 1.

On the other side of the card (Side 2) the student again prints the sentence, underlines the word, adds the phonetic spelling. In addition the meaning of the word is written. This side will be seen by his/her buddy. The buddy approach to vocabulary card study includes the following unique features:

1. Learning takes place on both sides of the card. The students are learning their own words, and the buddy, from exposure to Side 2, learns incidentally as he/she role-plays the instructor.
2. All students in a class find some words that are unknown to them.
3. Peers can use methods and techniques with each other that would be appropriate for a teacher to use.
4. As they interact, buddies learn to deal with each other as human beings.
5. The teacher demonstrates that vocabulary building is a lifelong activity.

IV. Assign the chapter to be read.

V. Give a review test.

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Activity Sheet 6

Principle for Simplifying Written Communication

Remove the "fat."

Rewrite the information in the following statement to make it clearer. Break it into smaller sentences.

The deficiencies frequently ascribed to textbooks are not really inherent in the medium per se, but reflect, rather, deficiencies that are common to all inadequately prepared instructional materials, such as lack of lucidity, ineffective communication, inappropriate level of sophistication, and absence of exploratory and integrative ideas.

*See Suggested Responses for Activity Worksheets.

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Activity Sheet 7

Principles for Simplifying Written Communication

Use the Familiar Word

Using terms familiar to your students, describe one attribute you consider essential for a good teacher to possess. Explain why you think that attribute is a basic requirement in teaching. Limit your writing to one paragraph.

*See Suggested Responses for Activity Worksheets.

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Activity Sheet 8

Principles of Simplifying Written Communication

Use Simple Synonyms

Write a more familiar synonym beside those listed below.

1. modification _____
2. utilization _____
3. Initial _____
4. optimum _____
5. demonstrate _____
6. objective _____
7. encounter _____
8. maximal _____
9. adjacent _____
10. elevate _____

*See Suggested Responses for Activity Worksheets.

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Activity Sheet 9

Principles for Simplifying Written Communication

Use Active Words

Rewrite the following ideas using active rather than passive terms.

Example:

Passive: An improvement in grades has been seen.

Active: Grades have improved.

1. Passive: A sharp increase in student attendance has been noted.

Active:

2. Passive: When application of pressure is employed by the operator....

Active:

3. Passive: Completion of the test by 2 o'clock will result in early dismissal.

Active:

*See Suggested Responses of Activity Worksheets.

Activity Sheet 10

Principles of Simplifying Written Communication

Consider Frame of Reference and Word Meaning

Write the word that comes to mind when you read the words appearing below.

1. proposition _____
2. power _____
3. machine _____
4. sportsman _____
5. freedom _____

*See Suggested Responses for Activity Worksheets.

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Suggested Responses for Activity Worksheets

Activity Sheet 6 - Remove the "fat."

Textbooks themselves are not necessarily poor teaching aids. They, like other teaching aids, become poor when they are not clear and understandable for the students who use them.

Activity Sheet 7 - Use the Familiar Word

Reread the paragraph you have written and circle any words you think might be considered "unfamiliar." Determine if, on the average, you use more than one unfamiliar word out of every five words and a sentence length of less than 20 words.

Activity Sheet 8 - Use of Synonyms

- | | | |
|-----|--------------|-------------------|
| 1. | modification | (change) |
| 2. | utilization | (use) |
| 3. | initial | (first) |
| 4. | optimum | (best, most) |
| 5. | demonstrate | (show, do) |
| 6. | objective | (aim, goal) |
| 7. | encounter | (meet) |
| 8. | maximal | (most) |
| 9. | adjacent | (beside, next to) |
| 10. | elevate | (raise, lift) |

Activity Sheet 9 - Use Active Words

Passive: A sharp increase in student attendance has been noted.

Active: Student attendance has increased sharply

Passive: When application of pressure is employed by the operator....

Active: When the operator applies pressure....

Passive: Completion of the test by 2 o'clock will result in early dismissal.

Active: If you finish by 2 o'clock you may leave.

Activity Sheet 10 - Consider Student's Frame of Reference

There will be wide differences in associations related to the same written word. Past experience and purpose give meaning to words. Choose words which are adapted to the reader to avoid misinterpretation.

*Materials adapted from: Vocational Education Inservice Training, The Department of Special Education, School of Education, The University of Kansas.

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Evaluation Form

Notes

Evaluation of the effectiveness of the curriculum modification presented in this module will take place as the educator puts into practice the techniques described. In order for the modification to meet the learning needs of the exceptional learner, the educator must be cognizant of the various learning styles and how these learning styles need to be addressed. Once aware of the learning styles of the their students, instructors can then put into practice the various curriculum modifications presented in this module. Activities which may help the educator become proficient in the use of these modifications might include:

1. Select a student encountering learning problems. Examine the student's strengths and weaknesses. Examine the materials currently in use in light of the student's strengths and weaknesses and then adapt the material to meet the student's needs. Write a brief description of the results, student's attitude and performance, adaptation time required, class reaction, etc..
2. Select a class handout, test, study guide, etc., and analyze it as to style and format using the procedures discussed in this module. Make any necessary revisions.